

CLAIMS:

1. A method of writing to a magnetic media, the method comprising:
producing a write current having a first component for generating a
magnetic write field; and
embedding a second component in the write current to generate a
high frequency magnetic field, the magnetic write field and
the high frequency magnetic field being controlled to create
an area of magnetic resonance within the magnetic media,
based on the magnitude of the magnetic write field and the
frequency of the high frequency magnetic field, wherein the
area of magnetic resonance within the magnetic media is
magnetically polarized in the direction of the magnetic write
field.
2. The method of claim 1, wherein embedding the second component
in the write current comprises configuring a write current circuit to produce a high
frequency oscillation in the write current following a transition in the write current
from one direction to the opposite direction.
3. The method of claim 1, wherein embedding the second component
in the write current comprises modulating the write current with a high frequency
current.
4. The method of claim 1, wherein the second component of the write
current causes a magnetic precession within a magnetic write pole.
5. The method of claim 4, wherein the magnetic precession within the
magnetic write pole generates the high frequency magnetic field.

6. The method of claim 5, wherein the high frequency magnetic field is orientated parallel to the magnetic media.
7. The method of claim 1, wherein the write current generates a magnetic field that includes the magnetic write field and an embedded high frequency magnetic field .
8. The method of claim 7, wherein the embedded high frequency magnetic field is orientated perpendicular to the magnetic media.
9. The method of claim 7, wherein the magnetic media has a tilted anisotropy.
10. The method of claim 1, further including selecting the magnetic media and frequency of the high frequency magnetic field such that the magnitude of the magnetic write field that will create magnetic resonance within the magnetic media corresponds to the steepest magnitude gradient of the magnetic write field.
11. The method of claim 1, wherein a period of the magnetic write field is much greater than a period of the high frequency magnetic write field.
12. The method of claim 1, wherein a period of the high frequency magnetic field is no less than the switching time between positive and negative magnitudes of the magnetic write field.
13. The method of claim 1, wherein a period of the magnetic write field is at least ten times greater than a period of the high frequency magnetic write field.

14. A magnetic writer for writing to a magnetic media, the magnetic writer comprising:

a write pole responsive to a write current to generate a magnetic write field; and

a write current generating circuit for generating the write current with a first component generating the magnetic write field and a second component generating a high frequency magnetic field, the magnetic write field and the high frequency magnetic field being controlled to create an area of magnetic resonance within the magnetic media, based on the magnitude of the magnetic write field and the frequency of the high frequency magnetic field, wherein the area of magnetic resonance within the magnetic media is magnetically polarized in the direction of the magnetic write field.

15. The magnetic writer of claim 14, wherein the second component of the write current is created by configuring the write current generating circuit to produce high frequency oscillations following a transition in the write current from one direction to an opposite direction.

16. The magnetic writer of claim 14, wherein the second component of the write current is created by modulating the write current with a high frequency current.

17. The magnetic writer of claim 14, wherein the second component of the write current creates magnetic precession within the write pole, wherein

magnetic precession within the write pole generates the high frequency magnetic field.

18. . The magnetic writer of claim 14, wherein the second component of the write current generates the high frequency magnetic field.

19. The magnetic writer of claim 18, wherein the high frequency magnetic field is oriented perpendicular to the magnetic media.

20. The magnetic writer of claim 14, wherein the area of magnetic resonance is dependent on the physical properties of the magnetic media, the frequency of the high frequency field, and the magnitude of the magnetic write field.